

1 UNITED STATES DEPARTMENT OF ENERGY  
2 PUBLIC SCOPING MEETING  
3 CARBON SEQUESTRATION PROGRAM  
4  
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7 REPORT OF PROCEEDINGS had at the  
8 Holiday Inn Hotel, 3405 Algonquin Road, Rolling Meadows,  
9 Illinois on the 19th day of May, 2004.  
10

11 PRESENT:

12 ON BEHALF OF THE DEPARTMENT OF ENERGY

13 LLOYD LORENZI

14 SCOTT KLARA  
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1                   MR. LORENZI: We're going to start the meeting  
2 a little bit late now. It's about eight minutes past  
3 7:00, so let's begin.

4                   This meeting was arranged by the U.S.  
5 Department of Energy as part of a process to obtain  
6 public participation for preparing environmental review.  
7 What we call an environmental impact statement, which  
8 will assist the Department of Energy in identifying and  
9 prioritizing issues, evaluating potential impacts,  
10 establishing a framework for environmental solutions and  
11 defining a program for research, development and testing  
12 of technologies and methods for the sequestration of  
13 carbon dioxide. This is the third of eight meetings  
14 planned around the country for that purpose.

15                   The carbon sequestration activities  
16 supported by the Department of Energy would help achieve  
17 the goals of the global climate changing initiative,  
18 which was announced by the President in 2002.

19                   Now, an initiative requires two things  
20 that we are focused on. One is the development of our  
21 portfolio technology options with potential to reduce  
22 the carbon intensity of the U.S. economy and second, to  
23 establish an information base needed by the year 2012

1 for effective carbon sequestration decisions of balanced  
2 economic growth and investment in clean energy  
3 technologies.

4                   The preparation or the implementation of  
5 a carbon sequestration program to achieve these goals  
6 provides the essence of the basis for the Department of  
7 Energy decision to prepare an environmental impact  
8 statement. And the orient important comments as well as  
9 comments received at all other meetings until the  
10 closing date for comment on June 25th will be an  
11 important part of the effort to prepare that  
12 environmental impact statement.

13                   So I thank you all for your attendance.  
14 My name is Lloyd Lorenzi and I'm from the Department of  
15 Energy's Office in Pittsburgh, Pennsylvania. And we  
16 have one other representative who will speak here  
17 tonight from the Department of Energy and he will  
18 introduce himself.

19                   MR. KLARA: I'm Scott Klara with the  
20 Department of Energy as well.

21                   MR. LORENZI: Assisting the Department of  
22 Energy in preparing the environmental impact statement  
23 is a team of environmental and administrative

1 specialists lead by the Potomac-Hudson Engineering  
2 Company. I would ask the representatives from Potomac-  
3 Hudson team who are here tonight to introduce themselves  
4 also.

5 MR. CAREY: Good evening. My name is Fred  
6 Carey. I'm with Potomac-Hudson Engineering. I also  
7 have Kevin Johnson with the ORS Corporation and Linda  
8 Vlaeminick is --

9 MR. LORENZI: Thank you, sir. We also have a  
10 Court Reporter here to prepare a transcript of this  
11 meeting, particularly your comments which we, the  
12 Department of Energy at Potomac-Hudson team will use to  
13 document and identify views from the public regarding  
14 the desire to scope the content of the environmental  
15 impact statement.

16 The essence to the meeting we provided a  
17 variety of information including the information on the  
18 process to prepare an environmental impact statement as  
19 well as the information on the Department of Energy's  
20 current activities and plans for the future with regard  
21 to studies of carbon sequestration. We've also provided  
22 a registration sheet so I would encourage you all to  
23 sign as a form of record for the Department of Energy on

1 your attendance here tonight.

2 We've also provided comment sheets that  
3 you can use tonight or following the meeting to submit  
4 written comments. However, tonight we want to get oral  
5 comments. That's why we're having this particular  
6 meeting. And we will use those comments, as I  
7 mentioned, as well as other comments received by the  
8 closing date of June 25th, to assist us in preparing  
9 that draft environmental impact statement.

10 The draft of that document, the  
11 environmental impact statement, when it's completed will  
12 be made available for review and comment also. And we  
13 expect that the process to prepare that draft EIS will  
14 require about 12 months. So sometime next summer is  
15 probably the target date, the best target date that we  
16 can provide for having that draft available for review.

17 Before we begin with your comments,  
18 however, Scott Klara from the Department of Energy will  
19 provide a summary of carbon sequestration activities.  
20 Then the microphone will be open to you all for your  
21 comments.

22 MR. KLARA: Good evening, everyone. We  
23 appreciate you taking time out of your busy schedule to

1 be with us here for this evening.

2 As Lloyd indicated, I will be giving you an  
3 overview of the carbon sequestration program with the  
4 United States Department of Energy.

5 I'd like to first start out and give you  
6 an idea of the outline. I'll be up here probably about  
7 25 minutes giving you this overview. And the areas that  
8 I plan to cover are to give you an explanation about  
9 what is carbon sequestration, information about fossil  
10 energy, greenhouse gas situations in the United States,  
11 talk about the Sequestration Program, give you some high  
12 level insights into the program, then talk about a few  
13 specific programmatic activities that could likely  
14 benefit from this programmatic environmental impact  
15 statement activity.

16 First let's talk about what is carbon  
17 sequestration. Carbon sequestration essentially is the  
18 capture and storage of greenhouse gases with CO2 being a  
19 very predominant greenhouse gas and primarily storing  
20 that so that it won't be emitted to the atmosphere.

21 Capture can occur in two ways. One is  
22 directly in a facility like a power plant. Recapture  
23 the CO2. You know exactly where it came from and you

1 store it somewhere. The other is what we call indirect  
2 capture where you use, for example, planting a tree.  
3 And it would take CO2 out of the atmosphere but you  
4 don't really know where that CO2 came from but it still  
5 results in a reduction for the CO2 in the atmosphere.

6               Several storage locations exist under  
7 carbon sequestration. Some of these are underground  
8 reservoirs deep in the earth. And the types of  
9 reservoirs that we look at here, oil and gas reservoirs,  
10 reservoir type called Saline Reservoirs that contains a  
11 salty brackish water. And the other is unmineable coal  
12 seams can also be used as a storage option.

13              Another type of option is putting CO2,  
14 dissolving it in the deep oceans. Right now deep ocean  
15 sequestration is just a concept that we're pursuing  
16 because we don't understand yet all the environmental  
17 implications of this. We do know that the ocean is the  
18 largest natural sink. So it's fundamental that we  
19 understand the mechanisms of how CO2 uptake in the ocean  
20 occurs.

21              Converting it to solid materials. There  
22 are ways there we can actually take CO2 and convert it  
23 to a rock like material called carbonates. That's

1 permanent sequestration.

2                   And lastly an option we call Terrestrial  
3 Sequestration that essentially means reforestation  
4 planting trees, other agricultural means such as in  
5 farming applications, which could be predominant in this  
6 area. For example, applications such as what we call No  
7 Till Farming to leave more carbon stored in the soils.

8                   These are the various  
9 storage/sequestration approaches that are being  
10 considered.

11                   Let me now walk you through a little bit  
12 of the fossil energy situation and give you an idea what  
13 all the buzz is about. The left pie shows the energy,  
14 the world's dominant energy sources in United States.  
15 And the right pie shows it in the world. In both cases  
16 fossil fuels, and what we mean by fossil fuels are coal,  
17 natural gas and oil, account for about 86 percent of the  
18 energy mix in both the United States and the world. So  
19 fossil fuels, as of this chart, as of today's date are  
20 very predominate energy source.

21                   Now, let's take a look at where we think  
22 fossil fuels are going, at least over the next 25 years.  
23 Many forecasting agencies take a look at these

1 scenarios. And in nearly all cases, at least for the  
2 next 25 years and through the mid-Century, nearly all  
3 reputable forecasters indicate that fossil fuels are not  
4 only here to stay but will likely increase.

5               This bottom left pie shows some of the  
6 data from the previous slide that shows the scenario in  
7 2002 where fossil fuels are 86 percent of the United  
8 State's mix. Then we go to a 2025 forecast that shows  
9 fossil fuels remaining now at about 87 percent. But the  
10 importance here is there's an increase of 40 percent  
11 increase in the use of fossil fuels. So the amount used  
12 in 2002 with this forecast would increase in 2025.

13              The reason this is important is when you  
14 burn a fossil fuel, it contains carbon. You create CO<sub>2</sub>,  
15 this predominant greenhouse gas. So what this would  
16 indicate is the CO<sub>2</sub> we're emitting now could increase  
17 potentially 40 percent in 2025 based on these kind of  
18 forecasts. So fossil fuels are here to stay at least  
19 toward the middle of the century.

20              What are some of the greenhouse gas  
21 implications of this? Now this is a bit of a  
22 complicated slide but I want to point to the bottom  
23 curve. This is data showing several hundred thousand

1 years of data obtained using ice cores and more recently  
2 direct measurements. The bottom line, the black line  
3 shows temperature. The top line shows CO2  
4 concentration.

5                   So one message and point I want you to  
6 take away from this is temperature of the earth has  
7 tracked CO2 concentration for several hundred thousand  
8 years. Now let's take a look at this red line on the  
9 right hand side axis that shows what's happened since  
10 the Industrial Revolution within the last 150 years.  
11 CO2 concentration has increased 30 percent.

12                   Because over this long term data there is  
13 such a good correlation in tracking between temperature  
14 and concentration, hence since CO2 concentrations gone  
15 up so significantly, there is some of the concern that  
16 people have, if temperature would track that. Right now  
17 CO2 concentration is going up about 1.5 PPM per year.  
18 So this shows it's gone up to 470 PPM. It's going up  
19 about 1.5 PPM per year based on current emissions.

20                   Now, let's take a look at the primary  
21 greenhouse gases that exist in the United States. And  
22 this is representative of many developed countries as  
23 well. What you see here is that CO2 from energy, so the

1 burning of fossil fuels primarily accounts for about 81  
2 percent of the greenhouse gas emissions in the United  
3 States.

4 Another major component is, you see a  
5 methane component there of 9 percent. Methane component  
6 is primarily fugitive methane emissions from landfills,  
7 coal mines and natural gas pipeline system. The reason  
8 this graph is of significance is our sequestration, R&D  
9 Program, focuses about 90 percent or more of its effort,  
10 95 percent of its effort on the CO2 issue. And then  
11 about 5 percent of the effort on this fugitive methane.  
12 And the reason is because of what this graph points to.

13 Here's another set of data showing the  
14 fossil fuels mix by energy sector. And I want to point  
15 you to the bottom middle, the middle pie showing that in  
16 the United States right now the fossil fuel mix is  
17 predominantly oil, about 46 percent, followed by natural  
18 gas and coal, both at about 27 percent each. So the  
19 bottom line is fossil fuels have carbon. When you burn  
20 them they produce CO2. So they all contribute.

21 The other point I want to make here is if  
22 you look at the right hand side you'll see that  
23 electricity accounts to close to 40 percent of the

1 contribution of greenhouse gas in the United States.  
2 Transportation, a smaller percentage of 30 percent. And  
3 then a category Other.

4 A point here again relative to the R&D  
5 that's being developed is a large focus on the R&D is on  
6 coal. And a large focus is on electricity. And mainly  
7 because electricity in power plants offer a nice large  
8 central station source that we can attack and capture  
9 significant quantities of CO<sub>2</sub>.

10 Essentially three ways that you can deal  
11 with carbon management and greenhouse gases. The first  
12 is some people call these legs of a triangle, corners of  
13 a pyramid. These are just very high level options that  
14 exist, categories. One is to reduce the carbon  
15 intensity. Ways we can do that are renewables, like  
16 wind, solar, nuclear and something called fuel switching  
17 where you switch from the high carbon base fuel to a  
18 lower carbon based fuel.

19 Improved efficiency both on a demand and  
20 supply side. On the supply side we'd be looking at  
21 improving efficiency of power plants, for example. So  
22 burning less coal per unit or burning less fuel per unit  
23 of energy. On the demand side you'd be looking at

1 things like more efficient vehicles, more efficient  
2 refrigerators, appliances, et cetera.

3           What we're here to talk about in the  
4 issue we're dealing with is the third option, which is  
5 sequestering carbon. And the point I want to make from  
6 this slide also is, and I'm going to show later on in  
7 the presentation, that the emissions are so, so large  
8 that all three of these options will be needed should we  
9 decide to significantly address the issue of greenhouse  
10 gases.

11           In the United States there are  
12 essentially two presidential drivers that exist, that  
13 drive our program. One is called, on the left, the  
14 National Climate Change Technology Initiative, which  
15 President Bush released on June 11th, 2001. And the  
16 importance of that initiative, it was the first time  
17 that the administration addressed the issue of climate  
18 change. And more importantly, they also mentioned  
19 carbon sequestration as one of the possibly viable  
20 options that should be looked at to address this issue.

21           The second initiative occurred February  
22 14th, 2002, called the Global Climate Change Initiative.  
23 Lloyd earlier addressed this in some of his speech.

1 And essentially what this did is it reinforced the idea  
2 of using technology such as carbon sequestration to deal  
3 with this issue.

4 What it also did is for the first time in  
5 the United States, it put some measurable metric on our  
6 greenhouse gas emissions, this quantity called the  
7 Greenhouse Gas Intensity. And I'll just show that in a  
8 few minutes in terms of what that means in terms of  
9 emission levels within the United States.

10 Another reason sequestration gets a lot  
11 of interest and hoopla is because of its large storage  
12 capacity. When we're dealing with greenhouse gas  
13 initiatives, and especially CO<sub>2</sub>, you're talking about  
14 buildings of tons of this stuff. And very few levers  
15 exist for us to pull to deal with those kind of emission  
16 levels. Sequestration is one that can provide the kind  
17 of capacities we need for storage.

18 What this graph shows on the right hand  
19 side is the Annual World Emissions. Don't get too hung  
20 up on the data or the units for the number. But it's  
21 6.5 for the world emissions last year. On this other  
22 axis we show some various sequestration options that  
23 could exist to store these emissions. And you'll see

1 there's a more solid blue line at the bottom which is  
2 the lower level estimate and then a range of estimates.

3 A lot of these sinks are unproven.

4 But what this shows is there's at least a  
5 century more of capacity with the sequestration concept  
6 to deal with these emissions, if not centuries worth.  
7 That's why, another reason why sequestration gets a lot  
8 of attention because of its potential.

9 We've also done some analysis that said,  
10 and this is a U.S., United States scenario, to say what  
11 if we were to stabilize by mid-century at some level?  
12 So what we've done is we said let's try to stabilize at  
13 2002 levels by mid-century. What are the options  
14 available to us to mitigate that amount of greenhouse  
15 gas emissions.

16 What this shows is, and don't worry again  
17 about the units, but what this shows is in the year  
18 2050, what you see is there's this number 1700 million  
19 metric tons would have to be dealt with in the United  
20 States. We've done some analysis to show what is  
21 available that could allow us to mitigate those  
22 emissions.

23 And what you see here are, you'll see

1 energy, you'll see everything is needed. Efficiency in  
2 renewables is the bottom color. Reforce station  
3 agriculture is the yellow. Non-CO2 greenhouse gases,  
4 these are those fugitive methane emissions.  
5 Sequestration are the top two bars. So the message  
6 again from these analyses are that the sequestration  
7 will not only be likely needed, it will likely have to  
8 bear the brunt of the burden in reducing these emissions  
9 because the numbers are just ever so large. That 1,700  
10 number, a large sized full fire power plant would be  
11 about 5, 5 per year, 5 million just to show you that  
12 it's a very huge number. But sequestration offers  
13 tremendous potential.

14                   What are some of our requirements for  
15 sequestration? Many of these are obvious but in the  
16 program we take them very serious from an R&D  
17 standpoint. We have to show that it's environmentally  
18 acceptable. No legacy for future generations. We have  
19 to ensure that it respects all existing ecosystems. We  
20 have to show that it's safe. No sudden large scale  
21 discharges. We also need to show, even if it's leaking  
22 in small quantities, that we're able to not only track  
23 it and determine that but we're able to stop it.

1                   That it's verifiable. We need to make  
2   sure that when we put CO2, if we put it in the ground or  
3   we try to store CO2 in a newly planted tree, that we're  
4   able to track it and show that it stays there for a  
5   given period of time, if not forever.

6                   Within the Department of Energy there's  
7   several organizations and divisions looking at  
8   sequestration and climate change. What this chart shows  
9   is, the upper box shows the climate change technology  
10  program, which is a coordinating function within the  
11  department. The lower right hand box shows basic  
12  science research that's occurring in what we call the  
13  Office of Science. Here is where a lot of the  
14  fundamental issues are being addressed.

15                  The left hand box is where our carbon  
16  sequestration program resides, in the Office of Fossil  
17  Energy. You'll see there it's called Applied R&D. And  
18  the reason that we're the group coming out with this  
19  programmatic environmental impact statement is because  
20  we have these technologies that are likely to be needed  
21  to be tested at a large scale into the future. And  
22  that's why we're driving this process.

23                  Also, to show you too, not only within

1 the DOE but within the government, climate change and  
2 sequestration research is taken very seriously. Nearly  
3 every government organization in some way, shape or form  
4 deals with sequestration related research. Our program  
5 interacts with many of these.

6 Just two examples. One in the upper  
7 right hand box, the EPA, the Environmental Protection  
8 Agency. One of their primary responsibilities are these  
9 non-CO2 or fugitive methane greenhouse gases reduction.

10 The lower left hand box, you see the United States  
11 Department of Agriculture. It's looking at four stream  
12 agricultural increased carbon octane in those systems.

13 This is the high level of our Carbon  
14 Sequestration Program. The core program is shown in  
15 that left blue bubble. And it's divided into five  
16 segmented areas; sequestration, capture, break through  
17 concepts, fugitive methane emissions and what we call  
18 measurable verification, which are technologies we're  
19 developing to track the fate of the CO2 when we store  
20 it. More information about that program is available  
21 both in the materials here and some locations I'll show  
22 you in a few slides.

23 We also have another effort we call the

1 Regional Partnerships, which is looking at the  
2 infrastructure. There is a Regional Partnership called  
3 the Illinois Basin that covers this region of the  
4 country. Some representatives from that partnership are  
5 here.

6                   There's also another part of the program  
7 which we call Integration. And essentially what this is  
8 is taking some of these concepts to the field to test  
9 them at a large scale to show that they're viable, to  
10 show that they do what the R&D says that they will do.

11                   Give you a sense of our regional  
12 partnerships, we have seven regional partnerships that  
13 cover most of the country. These partnerships are  
14 comprised of over 154 organizations, two Canadian  
15 provinces, three Indian nations and right now 40 states  
16 that are looking at the issues of sequestration in these  
17 various regions. As I indicated, the Illinois Basin  
18 star there is what covers this particular region.

19                   AUDIENCE: What do the colors indicate?

20                   MR. KLARA: Their coverage area. Colors  
21 indicated, for example, the west coast is in blue. All  
22 the blue areas are the states that are covered by that  
23 partnership. And you'll see some colors, to confuse you

1 a little bit, if some colors overlap, that means that  
2 some of this partnership covers part of the state and  
3 some of this partnership covers part of the state. So  
4 that's what the colors represent.

5                   What these regional partnerships do when  
6 we talk about infrastructure, the fact is if we have  
7 technologies today that were cost effective, we  
8 understood the performance issues, we couldn't deploy  
9 them tomorrow. And the reason is a lot of  
10 infrastructure pieces don't exist for carbon  
11 sequestration.

12                   For example, baseline in regions for  
13 sources and sinks. We have a good understanding in a  
14 very broad level of huge geologic formations that exist  
15 in the United States. Some of that capacity, much of  
16 that capacity is unproven. So what we need to do is get  
17 a good understanding of these large areas, what's real  
18 and what's not in terms of carbon sequestration  
19 potential and matching those to the sinks that are  
20 available in a given region.

21                   Another is regulatory environmental and  
22 outreach issues. Most people haven't heard of the  
23 carbon sequestration terminology and concepts. Another

1 reason this PIS will hopefully be helpful in spreading  
2 the word of this concept.

3 Regulatory; how is this regulated if we were  
4 to start pumping into the ground? All these issues are  
5 infrastructure issues that we really need to deal with.

6 Establishing water verification  
7 protocols. It's one thing to develop the technology  
8 that can take a snapshot of the reservoir and see where  
9 the CO2 is. It's another thing that's more of a  
10 subjective nature of how often do you have to take that  
11 snapshot that we have to monitor? Take that snapshot  
12 once a day? Once a month? Once a year of some mixture  
13 thereof? And that's going to be determined, hopefully,  
14 with the help of our regional partnerships in getting  
15 down to what's safe and what's realistic to be able to  
16 do.

17 And lastly, just talk about the  
18 determining benefits of the region. Sequestration can  
19 and will likely have benefits to our region. When you  
20 put CO2 in a geologic formation there are several  
21 options that can produce some value added benefits. For  
22 example, you can put CO2 in the ground in a depleting  
23 oil reservoir and produce oil. You can put CO2 in the

1 ground into a coal formation and produce natural gas.

2 In some states, for example, New Mexico,  
3 it's very difficult getting water. They're looking at  
4 putting CO2 in the ground to help produce this brackish  
5 salty water and cleaning it up for drinking purposes.  
6 Potential benefits do exist with this concept as well to  
7 the greenhouse gas issues.

8 Talk about our future gen project.  
9 Billion dollar effort we're entering into to test these  
10 concepts at a large scale. This project would be  
11 looking at taking a coal based technology called  
12 gasification, production electricity and hydrogen and  
13 then sequestering greenhouse gases, in this case CO2, to  
14 a geologic formation. A billion dollar plant we're  
15 looking at here to test these concepts at a very large  
16 scale. This project is just under way. It's probably  
17 still years away from actually getting out into the  
18 field. But the hope would be that this programmatic EIS  
19 would be very helpful to the environmental impact issues  
20 that they would have to face.

21 I would like to end the presentation to  
22 show you some source of information in addition to the  
23 materials that are provided here. We have a very

1 extensive website shown here and materials are available  
2 that you can find on this website. And I think it's one  
3 of the most extensive websites in the world in terms of  
4 carbon sequestration, what it's about, what's going on  
5 in the R&D programs.

6 And lastly we also offer an electronic  
7 carbon sequestration newsletter. It's free of charge if  
8 you have an e-mail account and essentially you can go to  
9 the information listed here. Hit us with an e-mail  
10 message and you will be put on there to receive free of  
11 charge a monthly newsletter that discusses in very short  
12 paragraph blurbs emerging issues and activities that are  
13 occurring in the world of carbon sequestration, both  
14 technology and policy side.

15 And with that I'll end the presentation  
16 and hand it back over to Lloyd who will carry us forward  
17 from here. Thank you.

18 MR. LORENZI: Thanks, Scott.

19 We previously had three individuals who  
20 requested to make comments tonight on Scott's  
21 presentation on a need to address CO2. Some of the  
22 indicators of our sequestration activities may have  
23 prompted some additional comments. But we will take the

1 individuals who previously requested to speak first.  
2 And then open up the floor to any others who desire to  
3 make comments tonight.

4                   It's a small group. We had previously  
5 thought that five minutes would be appropriate based on  
6 some of the comments we've had at prior meetings. Since  
7 this is a small group and we had only three people  
8 registered to speak, we'll dispense with the five minute  
9 limit but if you do speak, just keep it reasonable.

10                   We would ask that all speakers, for the  
11 purpose of the Court Reporter, spell their name and  
12 indicate their organizational affiliation if they are  
13 making comments on behalf of an organization.

14                   The first person who registered to speak  
15 was Nancy Mittleton. And she's talked to me a little  
16 bit earlier and I believe she had to leave the meeting.

17       So, Nancy was first and she's not currently in the  
18 room. The second person who had requested to speak was  
19 Paul Pierre Louis. Paul, would you use the microphone?

20                   MR. PIERRELOUIS: My name is Paul, P-a-u-l, P  
21 as in Peter, i-e-r-r-e-l-o-u-i-s. I'm a project  
22 engineer in our Office of Coal Development, Department  
23 of Commerce and Economic Opportunity.

1                   I'm here today representing the Illinois  
2 Office of Coal Development. Bill Hoback, chief of the  
3 office, could not be here today. I would like to add  
4 that the Department of Commerce and Economic Opportunity  
5 Bureau of Energy and Recycling wanted to attend in order  
6 to make supportive comments about the sequestration  
7 program. Unfortunately, their schedule did not permit  
8 them to do so. But they will submit written comments.

9                   We have come to express our enthusiastic  
10 support of our partners at the USDOE and the Illinois  
11 State Geological Survey. Like many people who are  
12 beginning to understand the subject matter of this  
13 meeting, it wasn't long ago that the only things  
14 sequestered in America were juries, usually in major  
15 criminal trials, perhaps, as often as not, in a  
16 rendition from Hollywood.

17                  Today, as we address the realities of  
18 making our world a safer place, sequestration of carbon  
19 is a scientific phrase that our folks are using quite  
20 often as we travel about the state. Anyone who is in  
21 our line of work, anyone who realizes the challenges to  
22 fossil fuels as an energy source of the future, needs to  
23 help the Department of Energy and other advocates make

1 our case to the public.

2                   We can, and we must proceed aggressively  
3 toward multiple carbon sequestration strategies. Our  
4 future as a nation, we believe, depends on the cleaner  
5 use of fossil fuels, specifically in our case, Illinois  
6 coal. It is reliable, affordable and secure. But in  
7 saying that it is our responsibility and the  
8 responsibility of our coal producers and users, to be  
9 four square behind the kind of progress that DOE,  
10 Geological Survey and others are making to harness  
11 greenhouse gases.

12                   Having said, that, I'll take just a  
13 minute more to emphasize how critical this work is to  
14 our people and to our state. Like many coal-mining  
15 regions, Illinois has suffered a great loss of jobs and  
16 economic activity since the first days of the Clean Air  
17 Act. We cannot reverse that trend by stomping our feet.  
18 And, as you know, no state in the nation puts the kind  
19 of resources that Illinois does into helping develop  
20 clean air technologies for burning or processing coal  
21 and for more advanced use of coal combustion byproducts.

22                   We applaud the advances made to date by  
23 the DOE Office of Fossil Energy, which was on the

1 cutting edge of sequestration technology as far back as  
2 1999. We agree with the assessment that sequestration  
3 techniques and practices must provide stable, long-term  
4 storage, be cost competitive, and have no negative  
5 effects on the environment.

6                   We are impressed by the potential for  
7 underground storage of CO2 in the staggering amounts of  
8 300 to 3,000 gigatons of carbon. But that kind of a  
9 capacity is necessary, we believe, if we are to provide a  
10 real and appreciable impact on greenhouse gas reduction.

11                   Our state, we believe, has great promise  
12 for the underground sequestration of CO2. The Illinois  
13 Coal Basin underlies 80 percent of the surface of  
14 Illinois. We have more unmineable seams of coal than  
15 almost anywhere else in the United States. We have, in  
16 addition, oil and gas fields from which additional  
17 resources could be derived to support a major  
18 sequestration effort.

19                   Governor Blagojevich and our Illinois  
20 congressional delegation are steadfast behind Illinois'  
21 bid to host DOE's forward-looking FutureGen initiative.

22 I am proud to say that they are joined by our coal  
23 industry, our environmental community and the working

1 men and women of the coal fields of Illinois.

2 I thank you for the opportunity to speak.

3 We have a strong team in Illinois and I'm proud to be  
4 part of it.

5 MR. LORENZI: Thank you, Paul. Did you say  
6 you were going to submit written comments also? Will  
7 you leave a copy of your comments? Thank you.

8 The third individual was Marvin Keith.

9 MR. KEITH: I'm a retired mechanical engineer.  
10 I worked with Wisconsin Natural Gas for a number of  
11 years in the '80's. I was the Racine County Environment  
12 Engineer as such. And I am familiar with the natural  
13 gas part of carbon dioxide production. I'll reserve my  
14 comments, my technical comments. I'll submit them in  
15 writing at a later date.

16 But I want to say I'm excited about this  
17 program for Illinois because the coal industry is a  
18 major resource for Illinois. And it's gotten a lot of  
19 grief from the Greens. I'm surprised if there aren't  
20 members of the Green Party here. Maybe there are. But  
21 I would expect to see pickets outside and trouble  
22 because I think they're just against anything that  
23 fosters the burning of coal.

1                   And I think it's our only real hope  
2 energy wise. And I'm very pleased that this program  
3 exists. And I'm sorry that Illinois doesn't seem to be  
4 talking about it. I stumbled on the fact that this  
5 meeting was occurring just a couple of days ago by  
6 surfing the net. And I'm dismayed that so many chairs  
7 are empty here.

8                   How many people have turned out at the  
9 other meetings that you had?

10                  MR. LORENZI: It varies, depending on meeting  
11 location.

12                  MR. KEITH: Is this typical?

13                  MR. LORENZI: This is one of the smaller turn  
14 outs.

15                  MR. KEITH: I hope so. But I would say that  
16 you need a better, would you say advertizer? Somebody  
17 has to be talking about it more because there should  
18 have been representatives from the universities here.  
19 There should have been high school students here that  
20 are interested. I mean, this was a great opportunity to  
21 get an idea that something good is happening about coal,  
22 you know?

23                  And that's all I have to say.

1           MR. LORENZI: I would make one request of you  
2 then. Besides submitting technical comments, if you  
3 could submit any other suggestions on who to notify or  
4 how to notify organizations --

5           MR. KEITH: Are you hiring?

6           MR. LORENZI: -- to get better turn out.

7                   Ask Scott.

8           MR. KEITH: I'll do that.

9           MR. LORENZI: Appreciate it, thank you.

10                   Are there any other individuals or  
11 attendees who want to make some comments tonight about  
12 what they've heard, about this program or about  
13 developing the environmental impact statement?

14           MR. KEITH: Why is it going to take so long  
15 for the impact statement to be finished?

16           MR. LORENZI: Okay, we have to complete eight  
17 public meetings for this particular project. And we  
18 have to allow a certain amount of time following those  
19 meetings for delivery of comments. That's why we have  
20 June 25th as a closing date for comments.

21                   Following that, of course we have to  
22 assemble a lot of information on carbon sequestration  
23 activities, program, respond to comments. We have had

1 some comments of a substantive nature that we didn't  
2 think of initially going in. So there's work to be done  
3 technically to prepare this document. It's not the kind  
4 of document that Scott, say, or I can issue. This is a  
5 Department of Energy document. And therefore it has to  
6 clear our office in Pittsburgh, it'll have to clear the  
7 offices in Washington, D.C. It'll have to have legal  
8 review and legal clearance before it gets -- there will  
9 be several versions of this before it ever hits the  
10 public domain.

11 MR. KEITH: How many engineers are working on  
12 the project?

13 MR. KLARA: EIS only or?

14 MR. KEITH: Any part that you're aware of.

15 MR. KLARA: Well, the program has, boy, that's  
16 probably a hundred or more.

17 MR. KEITH: Okay, they're well represented.

18 MR. KLARA: Yes.

19 MR. LORENZI: Any other comments? No other  
20 comments. We certainly appreciate your coming out  
21 tonight for the meeting. We appreciate the people who  
22 did speak and we look forward to the written comments  
23 that will be submitted. And we hope that those in

1 attendance who didn't speak will think about this  
2 particular activity, the DIS effort, carbon  
3 sequestration in general. And we would encourage you to  
4 take the opportunity to submit comments up until June  
5 25th. Take some comment sheets before you leave.  
6 There's information on who to contact as far as  
7 submitting comments in one of the brochures back there.  
8 Take the opportunity, please, if you do have the  
9 interest.

10 And we again thank you for your presence  
11 here tonight and hope you have a safe trip back to your  
12 homes. And I won't give you any other chance comment.  
13 So we'll just close the meeting with that comment of  
14 mine.

15 MR. KEITH: One other question. Is there  
16 instructions on who to direct additional questions to?

17 MR. KLARA: Yes, I'll show you that in just a  
18 minute.

19 MR. LORENZI: So we'll call the meeting to a  
20 close then. It's about 7:45.

21 (Whereupon, the above meeting was  
22 concluded at 7:45 p.m.)

23